

**WHAT IS CLAIMED IS:**

- 1           1.     A method of organizing a collection of objects, comprising:  
2           segmenting a sequence of objects into object clusters based on  
3                     comparisons of successive object intervals to weighted measures of  
4                     cluster extent, and  
5                     comparisons of successive object intervals to weighted measures of  
6                     cluster object density.
- 1           2.     The method of claim 1, wherein measures of cluster extent  
2     correspond to spans of recorded generation times over which objects in the  
3     clusters respectively extend.
- 1           3.     The method of claim 1, wherein measures of cluster extent  
2     correspond to spans of recorded generation locations over which objects in the  
3     clusters respectively extend.
- 1           4.     The method of claim 1, wherein measures of cluster object density  
2     correspond to average measures of time intervals between successive objects in  
3     the clusters.
- 1           5.     The method of claim 1, wherein measures of cluster object density  
2     correspond to averages of space intervals between successive objects in the  
3     clusters.
- 1           6.     The method of claim 1, wherein segmenting the object sequence  
2     comprises merging consecutive objects into a given cluster until an interval  
3     between a candidate object and a preceding object in the given cluster exceeds a  
4     threshold computed based on a weighted measure of the extent of the given  
5     cluster, at which point a new cluster is initiated with the candidate object.
- 1           7.     The method of claim 1, wherein segmenting the object sequence  
2     comprises merging consecutive objects into a given cluster until an interval  
3     between a candidate object and a preceding object in the given cluster exceeds a  
4     threshold computed based on a weighted measure of object density in the given  
5     cluster, at which point a new cluster is initiated with the candidate object.

1           8.     The method of claim 1, wherein weights applied to the measures of  
2 cluster extent decrease with increasing cluster size.

1           9.     The method of claim 1, wherein weights applied to the measures of  
2 cluster object density decrease with increasing cluster size.

1           10.    The method of claim 1, further comprising customizing at least one  
2 of the weights applied to the measures of cluster extent based on an analysis of  
3 objects in the cluster.

1           11.    The method of claim 10, wherein at least one weight is customized  
2 based on a fractal dimension estimate for context-related meta data associated  
3 with objects in the collection.

1           12.    The method of claim 1, further comprising customizing at least one  
2 of the weights applied to the measures of cluster object density based on an  
3 analysis of objects in the cluster.

1           13.    The method of claim 12, wherein at least one weight is customized  
2 based on a fractal dimension estimate for context-related meta data associated  
3 with objects in the collection.

1           14.    The method of claim 1, wherein segmenting the sequence of objects  
2 further comprises comparing object density of a given cluster including a  
3 candidate object with a weighted measure of object density for the given cluster  
4 without the candidate object.

1           15.    The method of claim 14, wherein measures of cluster object density  
2 correspond to averages of time intervals between successive objects in the  
3 clusters.

1           16.    The method of claim 14, wherein measures of cluster object density  
2 correspond to averages of space intervals between successive objects in the  
3 clusters.

1           17.    The method of claim 14, wherein the measure of object density  
2   corresponds to a moving average density of objects.

1           18.    The method of claim 14, wherein weights applied to the measures of  
2   cluster object density decrease with increasing cluster size.

1           19.    The method of claim 1, wherein objects are segmented beginning at  
2   a first end of the object sequence.

1           20.    The method of claim 19, wherein objects are further segmented  
2   beginning at a second end of the object sequence.

1           21.    The method of claim 1, wherein the sequence to be segmented  
2   includes objects of the following types: text, audio, graphics, still images, video  
3   and business events.

1           22.    A system of organizing a collection of objects, comprising:  
2           a segmentation engine operable to segment a sequence of objects into  
3   object clusters based on  
4                    comparisons of successive object intervals to weighted measures of  
5                    cluster extent, and  
6                    comparisons of successive object intervals to weighted measures of  
7                    cluster object density.

1           23.    A method of organizing a collection of objects, comprising:  
2           segmenting objects from the collection into clusters;  
3           extracting context-related meta data associated with the objects and  
4   parsable into multiple levels of a name hierarchy; and  
5           assigning names to clusters based on the extracted context-related meta  
6   data corresponding to a level of the name hierarchy selected to distinguish  
7   segmented clusters from one another.

1           24.    The method of claim 23, wherein names are assigned to clusters  
2   based on the extracted context-related meta data corresponding to a highest level  
3   of the name hierarchy that distinguishes clusters from each other.

1           25.    The method of claim 23, wherein the context-related meta data  
2 corresponds to object generation times.

1           26.    The method of claim 23, wherein the context-related meta data  
2 corresponds to object generation locations.

1           27.    The method of claim 26, wherein the context-related meta data  
2 corresponds to recorded information relating to country, city, and state of object  
3 generation.

1           28.    The method of claim 23, wherein the context-related meta data  
2 corresponds to both object generation times and object generation locations.

1           29.    The method of claim 23, further comprising automatically naming  
2 objects in a given cluster based on the name assigned to the given cluster.

1           30.    The method of claim 29, wherein the objects in the given cluster are  
2 named automatically in accordance with a chronological ordering of the objects in  
3 the given cluster.

1           31.    The method of claim 29, further comprising storing objects in the  
2 given cluster in a tree structure organized by cluster and labeled in accordance  
3 with the assigned names.

1           32.    A system of organizing a collection of objects, comprising:  
2 a segmentation engine operable to segment objects from the collection into  
3 clusters; and

4 a naming engine operable to extract context-related meta data associated  
5 with the objects and parsable into multiple levels of a name hierarchy, and assign  
6 names to each cluster based on the extracted context-related meta data  
7 corresponding to a level of the name hierarchy selected to distinguish segmented  
8 clusters from one another.

1           33.    A method of organizing a collection of objects, comprising:

2           accessing a sequence of objects segmented into clusters each including  
3           multiple objects arranged in a respective sequence in accordance with context-  
4           related meta data associated with the objects;  
5           selecting for each object cluster at least two constituent objects  
6           representative of beginning and ending instances in the corresponding object  
7           sequence; and  
8           graphically presenting the selected representative objects of each cluster.

1           34.     The method of claim 33, further comprising graphically presenting a  
2           stack of partially overlapping images representative of multiple objects in a cluster  
3           in response to user input.

1           35.     The method of claim 34, further comprising revealing an increased  
2           portion of a given representative image in the stack in response to detection of a  
3           user-controlled display icon positioned over the given representative image.

1           36.     The method of claim 33, wherein the representative objects of any  
2           given cluster are presented closer to each other than to the representative objects  
3           of other clusters.

1           37.     The method of claim 33, further comprising merging objects of one  
2           cluster into an adjacent cluster in response to user input.

1           38.     The method of claim 37, wherein objects of one cluster are merged  
2           into an adjacent cluster in response to dragging and dropping of the objects to be  
3           merged.

1           39.     The method of claim 37, wherein the objects of the one cluster are  
2           merged into the adjacent cluster in response to user selection of an icon for  
3           merging the clusters.

1           40.     The method of claim 33, further comprising presenting a graphical  
2           representation of distributions of objects in the clusters.

1           41.     The method of claim 40, wherein a object distribution for a given  
2     cluster is presented as object instances plotted along an axis corresponding to a  
3     scaled representation of the context-related extent spanned by the given cluster.

1           42.     The method of claim 40, further comprising splitting a given cluster  
2     in response to user selection of a point in the representation of the object  
3     distribution presented for the given cluster.

1           43.     The method of claim 40, further comprising automatically splitting a  
2     given cluster into two or more clusters in response to user input.

1           44.     The method of claim 43, wherein the given cluster is automatically  
2     split into a user-selected number of sub-clusters.

1           45.     The method of claim 43, wherein the given cluster is automatically  
2     split based on relative sizes of intervals between successive objects in the given  
3     cluster.

1           46.     The method of claim 33, wherein the context-related meta data  
2     corresponds to object generation times.

1           47.     The method of claim 33, wherein the context-related meta data  
2     corresponds to object generation locations.

1           48.     The method of claim 33, wherein the segmented sequence includes  
2     objects of the following types: text, audio, graphics, still images, video, and  
3     business events.

1           49.     The method of claim 33, further comprising graphically presenting  
2     at least one link to an object of a cluster arranged in a sequence in accordance  
3     with time-related meta data in a calendar format.

1           50.     The method of claim 33, further comprising graphically presenting  
2     at least one link to an object of a cluster arranged in a sequence in accordance  
3     with location-related meta data in a map format.

1           51.     A system of organizing a collection of objects, comprising a user  
2 interface layout engine operable to:  
3           access a sequence of objects from the collection segmented into clusters  
4 each including multiple objects arranged in a respective sequence in accordance  
5 with context-related meta data associated with the objects;  
6           select for each object cluster at least two constituent objects representative  
7 of beginning and ending instances in the corresponding object sequence; and  
8           graphically present the selected representative objects of each cluster on a  
9 screen with the representative objects of any given cluster presented closer to  
10 each other than to the representative objects of other clusters.